CLAIMS

Please amend the claims as indicated below:

1-10. (canceled).

11. (currently amended) A method of making a high-precision glass tube comprising

a step of providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber,

a step of pushing a solid glass rod into the inlet, ~~and a step of pulling a tube from the outlet, wherein~~ the inlet ~~comprises~~ comprising a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and forming a molten glass seal at the inlet,

a step of pulling a tube from the outlet, and

a step of controlling the dimensions of the tube, said step of controlling the dimensions of the tube comprising controlling the rate at which the glass rod is pushed into the inlet by means of a feedback system.

12-13. (canceled).

14. (currently amended) The method of claim ~~12~~ 11 wherein the rod has a ~~diameter,~~ diameter which varies at least 0.5% and no more than 5%.

15. (currently amended) The method of claim ~~14~~ 11 wherein the inlet has a diameter 0.5% to 5% smaller than the smallest diameter of the rod.

16-26. (canceled).

27. (currently amended) An apparatus adapted to form a hollow tube, the apparatus comprising

a heated chamber having an outlet,

a die in the outlet, ~~and~~

a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the die, through a gland in a wall of the chamber, and

an adjustment device operatively attached to a part of the hollow inner forming tube outside the chamber, the adjustment device physically moving the portion of the forming tube in the vicinity of the outlet ~~the inner forming tube being connected to a source of pressure or vacuum, the pressure or vacuum being controllable~~ to affect at least one dimension of the ~~shape~~ tube.

28. (canceled).

29. (currently amended) The apparatus of claim ~~28~~ 27 wherein the inner forming tube is straight, the apparatus further comprising an inlet passage having an axis parallel to the inner forming tube and offset from the inner forming tube.

30. (currently amended) The apparatus of claim 27 wherein the chamber is designed to be filled with molten glass, the ~~glass~~ chamber being constructed and arranged such that the glass is cooler adjacent the gland and adjacent the die than the average temperature of the glass in the chamber, and such that the gland ~~forming~~ forms a seal of glass between the inner forming tube and an opening in a wall of the chamber.

31. (currently amended) An apparatus for feeding glass rod sections, the rod sections having discrete ends, the apparatus comprising

a plurality of feed drives positioned and proportioned to feed said glass rod sections, at least ~~one~~ two of the feed drives being biased into engagement with the rod sections,

a sensor ~~for detecting~~ which detects rod section ends, and

a mechanism ~~for varying~~ which varies the bias of ~~the~~ one of said at least ~~one~~ two feed ~~drive~~ drives in response to the sensor while maintaining the bias of the other of said at least two feed drives to protect the rod section ends while continuing to feed the rod sections.

32. (currently amended) The apparatus of claim 31 wherein the rod section ends of successive rod sections are separate and abutting, the sensor detecting abutments between rod sections.

33-36 (canceled).

37. (currently amended) A method of controlling the rate at which a solid rod of heat-softenable material is fed through a heated restriction into a melting chamber, the restriction contacting and softening at least an outer portion of the rod, the method comprising a step of determining changes in temperature at the restriction, and a step of controlling the rate of feeding the rod into the melting chamber in response to changes in temperature at the restriction~~, wherein the restriction is the inlet of a melting chamber~~.

38. (currently amended) The method of claim ~~34~~ 37 wherein the melting chamber includes an outlet, the material forming a draw down at the outlet.

39-63 (canceled).

64. (currently amended) The method of claim 11 wherein the rod is substantially horizontal as it enters the ~~melting~~ heating chamber and the tube is substantially horizontal as it exits the ~~melting~~ heating chamber.

65. (currently amended) The method of claim 64 wherein the rod is pushed into the inlet at a controlled speed, the method further comprising a step of determining changes in the diameter of the rod, and a step of controlling the speed of feeding the rod in response to changes in the diameter of the rod.

66. (canceled).

67. (previously presented) The method of claim 11 wherein the step of pushing a solid glass rod into the inlet comprises feeding the rod into the inlet with sufficient force to produce a pressure in the chamber which suppresses formation of air bubbles or air channels in the glass in the chamber.

68. (currently amended) A method of continuously making a glass tube free of airlines in the tube wall, the method comprising

providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber, the heating chamber being filled with molten glass and being substantially free of gas,

a step of pushing a horizontal solid glass rod into the inlet, and

a step of pulling a horizontal tube from the outlet,

wherein the inlet comprises a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and forming a molten glass seal at the inlet, and

wherein the step of pushing a horizontal ~~tube~~ solid glass rod into the inlet of the chamber is with sufficient force to produce a pressure in the chamber which suppresses formation of air bubbles or air channels in the glass in the chamber.

69. (previously presented) The method of claim 68 wherein the solid glass is fed at a force of above about five kilograms.

Add the following claims 70-75:

70. (new) A method of making a high precision glass tube having tolerances for outside diameter, inside diameter, roundness, wall thickness and axial center of inside diameter in relation to the outside diameter of less than one hundred nanometers, the method comprising a step of providing a heating chamber, the heating chamber having a single inlet, a single outlet, and a hollow inner forming tube extending from the vicinity of the outlet, within an inside dimension of the outlet, through a gland in a wall of the chamber, a step of pushing a solid glass rod substantially horizontally into the inlet at a controlled speed, the inlet comprising a heated cone having a diameter less than the diameter of the solid glass rod, the cone melting the exterior of the rod and

forming a molten glass seal at the inlet, and a step of pulling a tube from the outlet substantially horizontally at a controlled speed.

71. (new) The method of claim 70 wherein the rod has a diameter which varies at least 0.5% and no more than 5%.

72. (new) The method of claim 70 wherein the cone has a smallest diameter 0.5% to 5% smaller than the smallest diameter of the rod.

73. (new) The method of claim 70 wherein said step of pushing a solid glass rod substantially horizontally into the inlet at a controlled speed and said step of pulling a tube from the outlet substantially horizontally at a controlled speed are controlled by a control system.

74. (new) The method of claim 73 wherein the control system utilizes a sensed temperature at said inlet as an indication of variations in the diameter of said rod.

75. (new) The method of claim 73 wherein the control system utilizes a sensed dimension of said tube.